

Not a official DHS Submitted

GEORGE DEUMEJIAN, GOVERNOR

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION 1111 JACKSON STREET, ROOM 6040 OAKLAND 94607 Phone: Area Code 415 464-1255



November 24,1986 File No. 2119.1023 (IHH)

David Bauer Vice President, Environmental Affairs International Technology Corporation 23456 Hawthorne Blvd. P.O. Box 2995 Torrance, CA 90509

Subject: Compliance Evaluation Inspection for IT - Baker facilty

Dear Mr. Bauer:

Enclosed is the Compliance Evaluation Inspection Report for the Interim Status Groundwater Monitoring Program at the Baker facility. This report is based on a review of file materials and on an inspection conducted on September 30, 1986.

The report states that the deficiencies noted in the Comprehensive Monitoring Evaluation sent to you on June 30, 1986 still exist at the Baker facility. It also states that the Board's Cleanup and Abatement Order No. 86-014 issued on September 30, 1986 specifies tasks which should remedy the deficiencies.

As discussed in the "Groundwater Monitoring Program" section of the report, the monitoring schedule in the past is very confusing. We expect that the revised Sampling and Analysis Plan required by Cleanup and Abatement Order No. 86-014 will contain rational analysis schedules so that similar situations will be avoided in the future. For your information, the ISD monitoring specifications for a facility under Detection Monitoring should be included in your Assessment Monitoring Program.

If you have questions, please call Lydia Huang at (415)464-1041 or Wil Bruhns at (415)464-0701.

Sincerely yours

Harold J. Singer

Industrial Division Chief

Enclosures

cc: EPA - Toxics and Waste Management Division, Region IX
DHS - Toxic Substance Control Division, Emeryville

SWRCB

City of Martinez

Contra Costa County Environmental Health Dept.

Mike Cooper, IT-Martinez

COMPLIANCE EVALUATION INSPECTION REPORT

IT Corporation, Baker Facility 5030 Imhoff Dr., Martinez, CA 94553 EPA ID Number: CAD089680250 Regional Board Evaluator: Lydia Huang

INTRODUCTION

On September 30, 1986, Regional Water Quality Control Board (Board) staff conducted an inspection of the Interim Status Document (ISD) groundwater monitoring program at the IT Corporation, Baker Facility, as part of a compliance evaluation inspection of the site. This report describes the background of the facility, evaluates the groundwater monitoring program through use of the Compliance Evaluation Inspections Checklist and the Inspection Compliance Form for a Facility which may be Affecting Groundwater Quality, and summarizes deficiencies found as a result of the evaluation.

SITE BACKGROUND

IT Corporation (discharger) owns and operates the Baker Facility, a hazardous waste disposal site east of Martinez in Contra Costa County. The site consists of approximately 130 acres containing 14 ponds used for the disposal of industrial, chemical, and other hazardous wastes. These liquid wastes are piped to the site from the discharger's Vine Hill Facility, located across Pacheco Creek from the Baker Facility.

The Board adopted waste discharge requirements (Order No. 78-76) for the discharger's Baker Facility on September 19, 1978. The waste discharge requirements prescribe waste discharge prohibitions, waste disposal specifications, a monitoring program, and provisions designed to protect the beneficial uses of the waters of the State. The monitoring program specifies groundwater sampling and site observations to assure compliance with the waste discharge requirements.

The discharger was issued an ISD by the California Department of Health Services (DOHS) for the Baker Facility on March 6, 1981. ISD Section VIII specifies that the discharger must implement a groundwater monitoring program by November 19, 1981. The groundwater monitoring program may be waived if the discharger can demonstrate in writing to the satisfaction of the Board that there is low potential for migration of hazardous waste or hazardous waste constituents from the discharger's facility via the uppermost aquifer to water supply wells or to surface water. The discharger requested such a waiver for the Baker Facility to the EPA in 1981. The EPA granted a six month delay in the implementation of the ISD groundwater monitoring program. The discharger later made the request to the Board in a letter dated October 19, 1982. While the Board did not make a determination that a low potential for migration of hazardous waste existed, the Board, in a letter dated January 17, 1984, found that the monitoring program specified under Order No. 78-76 satisfied the ISD ground water monitoring program if the discharger included analyses of the drinking water parameters in its sampling program.

EPA inspected the discharger's Baker Facility on April 13, 1984. EPA issued a Notice of Violation on August 3, 1984 and a Determination of Violation on September 27, 1984 based on this inspection, indicating that the discharger was violating its ISD by not implementing the groundwater monitoring program described above.

The discharger submitted a report dated October 29, 1984 by Leroy Crandall and Associates which assessed the hydrogeology and groundwater quality at the Baker facility. Among the findings, there existed chloride and groundwater contours which indicate leakage from one or more of the Baker ponds. The highest chloride concentrations and water levels were found to in the areas between ponds C and D-1.

Based on the EPA Determination of Violation and the Lercy Crandall and Associates report, the Board agreed that a potential of hazardous waste constituent migration from the discharger's facility existed and that it was necessary to implement an ISD groundwater monitoring program. As such, the Board issued Cleanup and Abatement Order No. 85-004 (CAO) to the discharger on January 16, 1985. The CAO prescribed a time schedule for implementation of a comprehensive monitoring program and of an assessment program to determine the nature and extent of contaminant migration in the groundwater.

On September 30, 1986, the Board issued a second CAO, Order No. 86-014, to the discharger and rescinded the previous CAO. The second CAO reflects the current understanding of the site hydrogeology based on existing data and the information that has been gathered to comply with the 1985 CAO. The tasks required by CAO No. 86-014 are to 1) summarize and rectify groundwater quality and level reporting; 2) establish representative initial background levels for groundwater quality; 3) submit a revised Sampling and Analysis Plan; 4) thoroughly characterize the hydrogeology; 5) further assess the apparent contaminant migration in the groundwater; and 6) determine the facility's status with regards to the Toxic Pits Cleanup Act of 1984.

The discharger's RCRA Part B application for the Baker Facility was submitted on August 1, 1983. EPA sent a Notice of Deficiency to the discharger on December 10, 1984. The discharger resubmitted the Part B application on February 8 and March 15, 1985. The discharger also submitted on May 28, 1985 a proposed groundwater monitoring program pursuant to the state's Subchapter 15 regulations.

DOCUMENTS REVIEWED

The following documents were reviewed as part of this evaluation:

- 1. ISD for the Baker Facility;
- 2. The discharger's reports of October 29, 1984 and January 31, 1985 concerning installation of monitoring wells at the facility and compliance with EPA's Compliance Order;
- Ieroy Crandall and Associates (ICA's) October 29, 1984 report entitled "Hydrogeologic Data Analysis Recommendations - IT Baker and Vine Hill Facilities";
- 4. The Board's Cleanup and Abatement Order No. 85-004 for the Baker and Vine Hill Facilities issued on January 16, 1985;

5. ICA's March 1, 1985 report entitled "Recommended Groundwater Assessment Plan";

6. The Board's April 29, 1985 response to LCA's March 1985 plan;

- 7. The discharger's May 28, 1985 Proposed Groundwater Monitoring Program Technical Report;
- 8. The Board's June 21, 1985 transmittal of the Interim Status Ground Water Monitoring Program Evaluation FY 84-85;
- 9. The discharger's September 6, 1985 report entitled "Corrected Copies Phase I Completion Report, Cleanup and Abatement Order No. 85-004";
- 10. The Board's June 30, 1986 transmittal of the Comprehensive Monitoring Evaluation FY 85-86;
- 11. The Board's Cleanup and Abatement Order No. 86-014 for the Baker and Vine Hill facilities issued on September 30, 1986;
- 12. The discharger's groundwater monitoring reports for samples taken since December 1984.

HYDROLOGIC AND GEOLOGIC SETTING

The Baker Facility is located east of the city of Martinez, at the confluence of Walnut and Pacheco Creeks, approximately two miles south and upstream of the mouth of Walnut Creek at Suisun Bay. The site is essentially located in a tidal flat with elevation less than 10 feet above sea level. Some low lying hills are located immediately to the southwest of the site and across Pacheco Creek to the west.

Two sequences of unconsolidated "Bay Mud" immediately underlie the site to a depth of approximately 80 feet. The upper of the two "Bay Mud" units found at the site consists of soft, plastic silty clay interbedded with numerous shallow sand and peat units that are likely the result of stream/marsh deposition. The older, lower "Bay Mud" is a firm dark greenish-gray silty clay with some interbedded silty sands and gravels.

Older sedimentary deposits of silts, sands, and gravels are found beneath the "Bay Muds". These deposits appear to be horizontally bedded. A well-consolidated, claystone bedrock is found below the sedimentary deposits.

Groundwater occurs at shallow depths in the "Bay Mud". Confined ground water occurs in a sand and gravel aquifer underlying the "Bay Mud" sequences. The discharger contends that the deeper groundwater is not likely to be hydraulically connected with the shallower zones of the Bay Mud" sequences. Groundwater level data collected over the past year indicate that the shallow groundwater is mounded underneath the facility's ponds. Surface water flow is generally to the north.

Groundwater quality below the facility is typically brackish. There is no known current use of this groundwater. The groundwater's potential for future use has not been established.

GROUNDWATER MONITORING PROGRAM

There are 28 groundwater monitoring wells at the Baker facility. ISD groundwater monitoring commenced in November 1984. During November 1984 and January through June 1985, monthly samples were collected from all the wells and analyzed for all but one of the drinking water parameters, and all of the groundwater quality and indicator parameters. The drinking water

parameter that has never been analyzed for is turbidity. This seven months of sampling and analysis was conducted on an accelerated schedule in an attempt to facilitate establishing background concentrations and to gather data for statistical analysis. These spanned three quarter of a year.

On March 1, 1985, the Discharger submitted an Assessment Plan in response to the Boards Cleanup and Abatement Order 85-004. The Assessment Plan proposed to monitor for parameters in addition to those required under a Detection Monitoring Program. These include volatile organics, base/neutral and acids, and pesticides. The latest Sampling and Analysis Plan (SAP) was submitted on September 6, 1986 as an appendix to the Phase I Completion Report. The SAP called for monitoring of drinking water, indicator, and water quality parameters, as well as "verification" parameters (beginning with the June 1985 sampling round). Presumably, the latter catagory refers to those parameters proposed in the Assessment Plan. However, the organics and pesticides analysis that was proposed in the Assessment Plan was not included among the "verification" parameters. The frequency of sampling and analysis was not given in either the SAP or the Assessment Plan, therefore it is impossible to determine the whether the discharger is following the plans. A review of the submitted groundwater data shows that the Discharger has not analyzed for several parameters listed in the SAP since June 1985 for all wells except well MW-112. These include arsenic, manganese, iron, silver. Between June 1985 and January 1986, monthly samples were collected from all of the monitoring wells. However, different wells were analyzed for different parameters. The sampling and analysis schedule must be clearly given in the next version of the SAP.

Five monitoring wells, MW-115 through -119, were added to the system beginning in September 1985. These wells were installed in response to the Boards CAO No. 85-004 to assess the extent of contaminant migration.

Monitoring well MW-112 is the currently proposed background well. Wells upgradient of the ponds are not possible for the Baker site because a groundwater mound has developed underneath the site. MW-112 as a lone background well is not acceptable because it is screened in only one of the water bearing units under the site, it has not been proven that the well is unaffected by the waste management units, and because spatial variations in groundwater quality cannot be accounted for by a single well. The discharger has been instructed in CAO No. 86-014 to submit a plan and schedule to install additional wells for the purpose of establishing initial background levels.

SUMMARY

Installation of an assessment monitoring program pursuant to the ISD and described by the above documents has begun. A significant amount of hydrogeological data has been generated, but the results so far has not conclusively shown whether waste constituents have migrated in the groundwater and if they have, where constituents may have migrated. CAO No. 86-014 instructed the discharge to further assess the apparent groundwater contamination.

The deficiencies noted in the Compliance Monitoring Evaluation (#10 under

the Documents Reviewed section) are still applicable. These include the incomplete definition of the uppermost aquifer, the uncertainties about the existence and continuity of confining layers, the lack of vertical gradients determinations, the absense of adequate background wells, the lack of statistical analysis of groundwater quality data, and the deficiencies in the sampling and analysis plan. All these issues have been addressed in CAO No. 86-014 which instructs the discharger to focus a hydrogeologic investigation to answer the unknowns, propose additions to the monitoring system, and to remedy existing practices in the sampling and analysis plan. Additional downgradient monitoring wells will probably be required once the hydrogeology is better defined.

Attachments

Compliance Evaluation Inspection Checklist
Inspection Compliance Form for a Facility which may be Affecting
Groundwater Quality
Facility Map
Cleanup and Abatement Order No. 86-014

CHECKLIST

COMPLIANCE EVALUATION INSPECTIONS

Com	ipany Na	me: IT Baker	EPA I.D. Num!	ber: CAD	0896802	50
		the contract of the contract o	; Inspector's N		Huang LWQCB	
		Martinez, ex 94553				
Соп	npany Co	ntact/Official: Dauglas Clark	; Branch/Organ	nization: <u>E</u>	Avir. Compl	ionu
	e: Dru	Leton	; Date of Inspe	ction: 4	130 166	
Тур	e of faci	lity: (check appropriately)	Yes	No	Unknown	Waived
Gro	a) b) c) d) und-Wat	surface impoundment landfill land treatment facility disposal waste pile* er Monitoring Program				, - -
1.	Was the	ground-water monitoring programed prior to site visit?				
	a)	Was the ground-water program reviewed at the facility prior to site inspection?				
2.	(capable impact the upp	round-water monitoring program e of determining the facility's on the quality of groundwater in ermost aquifer underlying the	- ·.	<i>V</i>		

^{*}Listed separate from landfill for convenience of identification.

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		-			
		_ -			
			Yes	No	Unknown Waived
	•	the at least one monitoring well been			Maradient W
	3.	installed in the uppermost aquifer			hpgradient w not possible
		hydraulically upgradient from the limit			·
		of the waste management area? 265.91(a)(1)			
		a) Are ground-water samples from the uppermost aquifer, represen-			
		tative of background ground-water			
		quality and not affected by the facility (as ensured by proper well number,			
		locations and depths?)			
		Have at least three monitoring wells been		•	
	4.	installed hydraulically downgradient at the	•		- -
		limit of the waste handling or management	✓	•	
		area? 265.91(a)(2)			
		a) Do well number, locations and depths			
		ensure prompt detection of any statistically significant amounts of HW			
		or HW constituents that migrate from			,
		the waste management area to the uppermost aquifer?			
	5.	Have the locations of the waste management areas been verified to conform with infor-			
		mation in the ground-water program?			
		•			
		 a) If the facility contains multiple waste management components, is each 			N/A
		component adequately monitored?			·
	6.	Do the numbers, locations, and depths			
	-	of the ground-water monitoring wells	,		depths not measured
		agree with the data in the ground-water monitoring system program?			- measings
		If "No", explain discrepancies.			
	7.	Well completion details. 265.91(c)			
	••		/		
		a) Are wells properly cased?b) Are wells screened (perforated)			Some Me,
		and packed where necessary to enable		/	some aren't
		sampling at appropriate depths? c) Are annular spaces properly sealed			
		to prevent contamination of ground-	· ·		-
		water?			
		•			

				• •		
3	•			Yes	No	Unknown
	•	8.	Has a ground-water sampling and analysis plan been developed? 265.92(a)	<u> </u>		c. al+
			a) Has it been followed?b) Is the plan kept at the facility?c) Does the plan include procedures			done during inspection.
			and techniques for: 1) Sample collection? 2) Sample preservation? 3) Sample shipment? 4) Analytical procedures? 5) Chain of custody control?	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		
		9.	Are the required parameters in ground-water samples being tested quarterly for the first year? 265.92(b) and 265.92 (c)(1)			
			a) Are the ground-water samples analyzed for the following:			
			 Parameters characterizing the suitability of the ground- water as a drinking water supply? 265.92(b)(1) Parameters establishing 			see comments in norreture in Groundwater montourp
			ground-water quality? 265.92(b)(2) 3) Parameters used as indicators of ground-water contamination? 265.92(b)(3)	<u>~</u> <u>~</u>	<u> </u>	Program sectio
			 (i) For each indicator parameter are at least four replicate measurements obtained at each upgradient well for each sample obtained during the first year of monitoring? 265.92(c)(2) (ii) Are provisions made to calculate the initial background arithmetic mean and variance of the respective parameter concentrations or values obtained from the upgradient well(s during the first year? 265.92(c)(2) 	s :)	· · · · · · · · · · · · · · · · · · ·	1/4 upgradient well not possible. (yes, for proposed backgrd well)
			b) For facilities which have completed first year ground-water sampling and analy requirements:	sis		
			 Have samples been obtained and analyze for the ground-water quality parameter at least annually? 265.92(d)(1) Have samples been obtained and analyzed for the indicators of ground-water contamination at least semi-annually? 265.92(d)(2) 			Mn and Fe have not been analyzed for since 6/85, but facility is under assessment. See narrative - "GW Mountainy Program"
				÷	·	

				Yes	No	Unknown
		time a sample was	taken? 265.92(e)			
	41	Were the ground-we evaluated annually monitoring wells as	ater surface elevations to determine whether the	e	/	
	e)	of monitoring wells	er, location or depth s was necessary, was t into compliance with		مستحدید مستحدید	N/A
10.	855	s an outline of a greessment program b 5.93(a)*	ound-water quality een prepared?			N/A
	a)	Does it describe a of determining:	program capable			Assessment Program has been implemented
		waste constit	rdous waste or hazardous uents have entered the			already.
		hazardous wa constituents:	xtent of migration of ste or hazardous waste in ground water? ns of hazardous waste			, -
	·	or hazardous in ground was	waste constituents ter?			
	p)	ments of each ind	ar of monitoring, replicate measure- licator parameter been oles taken for each			Initial tackgrod levels have not yet heen estathshed
		1) Were the res	ults compared with the round means from the rell(s) determined rst year?			
		individu	n well considered ally?	?		
		2) Was a signif decrease as	icant increase (or pH well) found in the:			Statistical Analysis
		(i) Upgradic (ii) Downgra If "Yes", Co must also be	ent wells adient wells empliance Checklist A-2 e completed.			- Haznot Haznot han done.

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,		_			
		- -			
	11.	Have records been kept of analyses for parameters in 265.92(c) and (d)? 265.94(a)(1)	Yes V	No Unknown	
	12.	Have records been kept of ground-water surface elevations taken at the time of sampling for each well? 265.94(a)(1)	<u> </u>		
	13.	Have records been kept of required elevations in 265.93(b)? 265.94(a)(1)		-	
	14.	Have the following been submitted to the Regional Administrator 265.94(a)(2):		-	
		 a) Initial background concentrations of parameters listed in 265.92(b) within 15 days after completing each quarterly analysis required during the first year? b) For each well, have any parameters whose concentrations or values have exceeded 		<u>v</u>	
		the maximum contaminant levels allowed in drinking water supplies been separately identified? c) Annual reports including:			
		 Concentrations or values of parameters used as indicators of ground-water contamination for each well along with required evaluations under 265.93(b)? Any significant differences from initial background values in upgradient wells separately identified? Results of the evaluation of ground-water surface elevations? 		<u> </u>	
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APPENDIX A-2

INSFECTION COMPLIANCE FORM FOR A FACILITY WHICH MAY BE AFFECTING GROUND-WATER QUALITY

				089680250
Company	Address: 5030 Inhoff Dr. Martinez, CA 94553	; Inspector's No	ame: <u>h</u>	Hnang
Company	Contact/Official: Douglas Clark			
Title:	Director	; Date of Inspe	ection:	9/30/86
-	acility: (Check appropriately) a) surface impoundment b) landfill c) land treatment facility d) disposal waste pile	Yes	No No	<u>Unknown</u>
eont upgr eant	e comparisons of ground-water amination indicator parameters for the adient well(s) 265.93(b) shown a signiful increase (or pH decrease as well) over all background? If "Yes", has this information been submitted to the Regional Administrat according to 265.94(a)(2)(ii)?			Exatistical Analysis her been done y
the sign	e comparisons of indicator parameters downgradient wells 265.93(b) shown a difficant increase (or pH decrease as well initial background?			· ·
a)	If "Yes", were additional ground-water samples taken for those downgradient wells where the significant difference was determined? 265.93(c)(2)	·		h.i.
	 Were samples split in two? Was the significant difference due human (e.g., laboratory) error? (If "Yes", do not continue.)) 	to		•

			Yes	<u>No</u>	Unknown
3.	the	significant differences were not due to or, was a written notice sent to Regional Administrator within 7 days of offirmation?			N/A
4.	AU	thin 15 days of notification of the Regional ministrator was a certified ground-water que essment plan submitted? 265.93(d)(2)*	ality		The assessment plan was submitted in N/A Response to the Region Board's Cleanup & Abatement Order No
	a)	Does the plan specify 265.93(d)(3):			85-014. The plan
		1) well information (specifics)		-	was submuted on 3/1185
		(a) number? (b) locations? (c) depths?			,,,,,,,,
		2) sampling methods?3) analytical methods?4) evaluation methods?5) schedule of implementation?			
	ь)	Does the plan allow for determination of 265.93(d)(4):			
		 Rate and extent of migration of hazardous waste or hazardous waste constituents? Concentrations of the hazardous waste or hazardous waste constituents? 	<u>~</u>		(rate extent-yes)
	e)	Is it indicated that the first determination was made as soon as technically feasible? 265.93(d)(5)		~	
		1) Within 15 days after the first determination was a written report containing the assessment of ground-water quality submitted to the Regional Administrator?			-
	d)	Was it determined that hazardous waste or hazardous waste constituents from the facility have entered the ground water?	CONTRACTO		/ resulta
		 If "No", was the original indicator evaluation program, required by 265.92 and 265.93(b), reinstated? 			so far has been inconclusive.
		(a) Was the Regional Administrator notified of the reinstatement of program within 15 days of the determination? 265.93(d)(6)			
Sec	not.	e Dega 9-10			

en (Merris, y.e., Cons.)

		Yes	<u>No</u>	Unknown
:)	If it was determined that hazardous waste or hazardous waste constituents have entered the ground water 265.93(d)(7):			N/A Has not been determined.
	1) For facilities where program was implemented prior to final closure, are determinations of hazardous waste or hazardous waste constituents continued on a quarterly basis? (If program was implemented during the post-closure care period, determinate made in accordance with the ground-way quality assessment plan may cease after the first determination.)	ations		Leterminee.
	(a) Were subsequent ground-water qual reports submitted to the Regional Administrator within 15 days of determination?	ity		
	Were records kept of the analyses and evaluations, specified in the groun water quality assessment (throughout the active life of the facility)? 265.94(b)(1)	d- 		
	(a) If a disposal facility, were (are) red kept throughout the post-closure period as well?	eords		
f)	Are annual reports submitted to the Regi- Administrator containing the results of the ground-water quality assessment program 265.94(b)(2)*	ne		Phase I Completion report.
	1) Do the reports include the calculated or measured rate of migration of hazardous waste or hazardous waste constituents during the reporting period?			

EXPLANATION

MW-8A @ EXISTING MONITORING WELL

IT CORPORATION BAKER FACULTY

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

CLEANUP AND ABATEMENT ORDER NO. 86-014

TT CORPORATION
VINE HILL AND BAKER
CLASS I DISPOSAL SITES
MARTINEZ, CONTRA COSTA COUNTY

FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter called the Board) finds that:

- 1. IT Corporation, hereinafter called the Discharger, owns and operates Class I disposal sites called the Baker and Vine Hill facilities. The sites are located east of Martinez in Contra Costa County. The locations of the sites are shown in Attachment A, which is incorporated herein and made a part of this Order.
- 2. The Board adopted Waste Discharge Requirements (Order No. 78-76) on September 19, 1978, which prescribe prohibitions, waste disposal specifications, leachate and drainage specifications, and provisions designed to protect waters of the State.
- 3. Order No. 78-76 states in part:

"A. Prohibition

The discharge of any waste or polluted runoff from the disposal areas to surface waters or groundwaters of the State is prohibited.

B. Waste Disposal Specifications

3. Waste materials shall be confined to the disposal sites as shown on Attachment A at all times...

C. Provisions

- 9. This Board considers the property owner to have a continuing responsibility for correcting any problem which may arise in the future as a result of this waste discharge or water applied to this property during subsequent use of the land for other purposes."
- 4. The Discharger submitted geotechnical information and water quality data on November 8, 1984 in a report by LeRoy Crandall and Associates. The report showed that waste constituents may have been discharged to groundwaters of the State outside of the designated disposal area at the Baker facility. The report included a contour map of chloride

concentration in groundwater, which showed highest chloride levels directly beneath ponds C and D-1 and decreasing levels towards the boundaries of the site. There also appeared to be a groundwater mound under the ponds that closely corresponds with the chloride contours.

- 5. This Board adopted Clearup and Abatement Order No. 85-004 on January 16, 1985 because there was evidence of violations and/or threatened violations of the requirements of Order No. 78-76 described in Finding 3. The Clearup and Abatement Order, in part, required the Discharger to identify the extent of contaminant migration in groundwater at the Baker facility, identify at least one upgradient well for both Baker and Vine Hill, and certify the adequacy of the existing groundwater monitoring program at both Baker and Vine Hill.
- 6. The Discharger has been cooperative and responded to the Cleanup and Abatement Order. However not all the tasks proposed by the Discharger as part of the response have been completed to date. In addition, review of the submitted materials indicates the need for additional investigation and re-examination of existing data. Cleanup and Abatement Order No. 85-004 is no longer applicable because of the work that has been completed.
- 7. The groundwater quality assessment program at the Baker facility has been inconclusive. The emphasis thus far has been on inorganics (simple salts), while the constituents of concern are more likely organic compounds. The Discharger had proposed to analyze the groundwater for numerous organics and heavy metals as part of the assessment program. The report submitted on September 6, 1985, containing the findings of the assessment to date, contains very limited organic data. The assessment program must be continued and focused on constituents of concern.
- 8. The Environmental Protection Agency (EPA), on June 4, 1981, awarded to the California Department of Health Services (DHS) Phase I Interim Authorization to administer the Resource Conservation and Recovery Act (RCRA). The Interim Authorization required that DHS impose interim status standards as required under RCRA.
- 9. DHS imposed interim status standards on the Discharger by issuing Interim Status Documents (ISD's) to the Discharger on March 6, 1981 for the Baker site and April 6, 1981 for the Vine Hill site. Section VIII of each ISD specifies that the Discharger must implement a groundwater monitoring program for each site by November 19, 1981. As part of such a groundwater monitoring program, the Discharger was required to perform various task including designation of an upgradient or background well, installation of an adequate number of downgradient wells that could immediately detect hazardous waste migration to the uppermost aquifer, analysis of groundwater samples for specific parameters, assessment of the groundwater quality, establishment of an initial background arithmetic mean, and determination of statistically significant changes in certain parameters.
- 10. The interagency agreement between DHS and the State Water Resources Control Board provides, in part, that the Board will inspect, review, and evaluate ISD groundwater monitoring at facilities regulated under

FORA.

- 11. On June 21, 1985, an Interim Status Groundwater Monitoring Evaluation by the Board staff for the Vine Hill facility was transmitted to the Discharger. This evaluation was based on review of file material and an inspection on May 1, 1985. The evaluation noted deficiencies in the groundwater monitoring system, the sampling and analysis plan, and the hydrogeological characterization of the site.
- 12. The Discharger responded to the specific requests of the evaluation described in Finding 11, except for the submittal of a revised Sampling and Analysis Plan for the Vine Hill facility as promised in a letter dated September 13, 1985 from the Discharger.
- 13. On February 4, 1986, a Compliance Evaluation Inspection (CEI) report of an Interim Status Groundwater Monitoring Evaluation by the Board staff for the Vine Hill facility was transmitted to the Discharger. This evaluation was based on review of file material and an inspection on October 30, 1985. As with the 1985 evaluation, this inspection reported inadequate monitoring of the uppermost aquifer, (e.g. no monitoring of the fill material and lack of support for the placement of wells), incomplete hydrogeologic investigations (e.g. the failure to define the lower limit of the uppermost aquifer and the interconnection between different aquifer materials), and a deficient sampling and analysis plan. This evaluation also noted the lack of vertical gradient data, insufficient static water level data, confusing groundwater monitoring analyses reporting, and lack of statistical evaluation of the groundwater quality data.
- 14. The Discharger has responded to the Febuary 1986 CEI. However, the Board's staff and the State Board's geologist have determined that the responses have been incomplete or inadequate, because the Discharger had not remedied the deficiencies noted in the CEI.
- 15. On June 30, 1986, a Compliance Monitoring Evaluation by Board staff of the Interim Status groundwater monitoring program at the Vine Hill facility was transmitted to the Discharger. This evaluation was based on review of file materials and inspection on May 29, 1986. The evaluation restated all of the findings of the two evaluations described in Findings 11 and 13. In addition, this Evaluation stated that the placement of the currently proposed background wells, MW-216 and 218, has not been adequately supported by water level data.
- 16. Wells MW-216 and 218 at the Vine Hill facility have been judged by Board staff to be unacceptable as background wells because these wells were not constructed to intercept the full thickness permeable zones.
- 17. In a June 10, 1985 letter from the Board, the Discharger was instructed to submit an Assessment Monitoring Plan for the Vine Hill Facility. The request was made after the Board staff reviewed a report titled "Hydrogeologic Data Analysis, Groundwater Monitoring Program, IT Corporation's Vine Hill Facility May 1985". This report was submitted as the Proposed Groundwater Monitoring Plan pursuant to Subchapter 15, Chapter 3, Title 23 of the California Administrative Code. The report described elevated levels of TOC, TOX, phenolics,

and boron in groundwater samples taken from well MW-203.

- 18. The Discharger responded to the June 10, 1985 letter by citing the long confusing history of the area around MW-203. The confusion arises because well MW-203 is located at the boundary between the Discharger's Vine Hill facility and Acme Landfill, and it is not clear where the apparent contamination originates. The Discharger took the position that an Assessment Program is not justified. The Compliance Monitoring Evaluation described in Finding 15 restates the need for the Discharger to investigate the source(s) of boron and phenolics in well MW-203.
- 19. On November 5, 1981, DuPont Company submitted a report to the Board entitled "Lead Report Boring Program Around Pond 100". The report presented the results of a boring and lead analyses program that the DuPont Company had conducted around Pond 100 at the Vine Hill site. The report documented apparent tetraethyl-lead (TEL) contamination of soils around and beneath ponds 100, 101, and 104. The Discharger has asserted that the high TEL levels were the result of faulty drilling and sampling methods and not actual contaminated soil. However, this assertion has not been verified.
- 20. On June 19, 1985, an Interim Status Groundwater Monitoring Evaluation by the Board staff for the Baker facility was transmitted to the Discharger. This evaluation was based on review of file material and an inspection on April 19, 1985. The Evaluation noted deficiencies with the Sampling and Analysis Plan and conflicting well construction data.
- 21. The Discharger responded to the June 1985 evaluation of the Baker facility with a revised Sampling and Analysis Plan and revised well construction data. However, the revised Sampling and Analysis Plan, Appendix H to a report dated September 6, 1985, did not remedy the deficiencies discussed in the evaluation, and therefore the plan is still deficient.
- 22. On June 30, 1986, a Compliance Monitoring Evaluation by Board staff of an Interim Status groundwater monitoring program at the Baker facility was transmitted to the Discharger. This evaluation was based on review of file material and an inspection on October 30, 1985. The evaluation cited deficiencies in the hydrogeologic characterization of the Baker facility, deficiencies in the Sampling and Analysis Plan, the lack of statistical analysis of groundwater quality data, and the lack of an adequate background well(s).
- 23. The currently proposed background well at the Baker facility, well MW-112, has been judged by the Board staff to be unacceptable as a single background well.
- 24. The reports and evaluations described in Findings 4, 11, 13, 15, 16, 17, 19, 20, 22, and 23 are evidence that the Discharger is violating and/or threatening to violate Order No. 78-76 and/or its Interim Status Document at both the Vine Hill and Baker facilities.
- 25. The continued existence of liquid in Class I ponds at the Baker

facility creates a hydraulic gradient outward from the ponds, which threatens to pollute groundwaters adjacent to the site. Water level contours through 1985 continue to show a groundwater mound centered approximately around ponds C and D-1 beneath the site. In addition, several groundwater monitoring wells at the Baker facility have consistently shown higher levels of waste constituents than other wells.

- 26. Based on Findings 4, 6, 7, and 25 for the Baker facility, and Findings 17, 18, and 19 for the Vine Hill facility, it is evident that surface impoundments at both Baker and Vine Hill threaten to pollute State waters. Specifically, the State waters that are threatened are adjacent surface waters and groundwater under the site. The groundwater is not currently being used.
- 27. Section 25208.6 of the California Health and Safety Code (Toxic Pits Cleanup Act of 1984) requires a Regional Board to order the closure of a surface impoundment(s) if the Board finds that a surface impoundment(s) is polluting or threatens to pollute State waters, and if double liners, a leachate collection system, and a groundwater monitoring program will not reasonably assure future protection of State waters. The Board may order the facility to install double liners, a leachate collection system, and a groundwater monitoring program instead of ordering the surface impoundments to close.
- 28. Section 25208.5 of the California Health and Safety Code (Toxic Pits Cleanup Act of 1984) requires that on or after January 1, 1989, no person shall discharge liquid hazardous wastes or hazardous wastes containing free liquids into a surface impoundment unless the surface impoundment is double lined, equipped with a leachate collection system, and groundwater monitoring is conducted. Section 25208.2 (f) of the California Health and Safety Code defines "discharge" to include storage of liquid hazardous wastes or hazardous waste containing free liquids.
- 29. This action is an order to enforce Waste Discharge Requirements previously adopted by the Board, statues, and other regulations. Therefore, this action is catagorically exempt from the provisions of the California Environmental Quality Act pursuant to Section 15321 of the Resources Agency Guidelines.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that IT Corporation, Vine Hill and Baker facilities, cleanup and abate the effects described in the above findings as follows:

- 1. Clarify and remedy the groundwater water level reporting method for both the Vine Hill and Baker facilities as follows:
 - a. Compile, tabulate, and summarize all the available static water level data by individual well. For each well and each sampling period, the information shall include:

i. water levels taken both before purging and after sampling;

ii. water levels shall be measured to the nearest 0.01 foot, relative to the surveyed reference elevation and mean-sea-level;

iii. the date and time the water levels were taken;

iv. method used to determine water levels; and

v. surveyed reference elevation for each well.

Water level contours shall be constructed for each sampling period and each stratigraphic horizon, and submitted with all the above information. Contours are to be constructed from measurements taken in wells screened in the same stratigraphic horizon and have similar screen elevations and screen lengths. The data points and values used to construct each contour shall be shown on each map. A report including all the information listed in this task is due December 1, 1986.

- b. All future reporting of water level data shall include the information listed in Task l.a.
- 2. Summarize the existing water quality data and establish initial background quality for both the Baker and Vine Hill facilities as follows:
 - a. Compile, tabulate, and summarize all groundwater chemical data available for both the Baker and Vine Hill facilities by individual well. The detection limit for each constituent shall be listed. A report shall be submitted to the Board by December 1, 1986.
 - b. All future submittal of groundwater quality data shall include the detection limit for each constituent, a list of which constituents were tested for each individual well, and the rationale behind the analysis schedule.
- 3. Establish initial background groundwater quality levels for both the Baker and Vine Hill facilities as follows:
 - a. Submit a detailed plan and schedule for collecting and statistically analyzing groundwater quality data to establish initial background levels for Executive Officer approval by December 1, 1986. The plan shall provide for determining background levels for different aquifer units, and take into account spacial and seasonal variations in groundwater quality. If existing groundwater monitoring wells are to be used for establishing initial background levels, the Discharger shall provide specific hydrogeologic data to support the placements of the wells and the selection of the screened intervals.
 - b. Implement the approved plan from Task 3.a according to a schedule specified by the Executive Officer.
 - c. Submit initial background water quality data with the necessary statistical analysis by a date to be specified by the Executive Officer.

- 4. Submit revised Sampling and Analysis Plans for both the Baker and Vine Hill facilities which address the deficiencies noted in the respective Compliance Monitoring Evaluation described in Findings 14 and 20. In addition, the Plans shall include well specific sampling and analysis schedules, and add turbidity as a parameter for analysis. The Sampling and Analysis Plans for both facilities shall be submitted by November 1, 1986.
- 5. Submit the following information or report by November 1, 1986 to complete previous submittals:
 - i. Development logs for wells MW-115 to 119 and 107A at the Baker facility (as promised in Appendix E of the Phase I completion report dated September 6, 1985)
- 6. Investigate and thoroughly characterize the hydrogeology at the Vine Hill facility as follows:
 - a. Submit a detailed plan and schedule to accomplish the tasks listed below by November 15, 1986 for Executive Officer approval. If the Discharger asserts that the work to accomplish the tasks listed below have already been done, then the Discharger shall submit a report(s) documenting the determinations by presenting the specific data which support the conclusions.
 - i. Define vertical gradients across the site with actual depth specific data (as would be gathered from cluster piezometers). Also define vertical hydraulic conductivities for the various hydrogeologic units beneath the site.
 - ii. Clearly identify the various aquifer/aquitard zones across the site and designate which wells are screened in the respective zones. Included in this task are revised cross sections which accurately reflect the lithology registered in the well and boring logs. In addition, discuss and provide specific data that demonstrate the integrity and continuity of all aquitards at the site.
 - iii. Compile or obtain stratigraphic, lithologic, and hydrogeologic information to address the potential of the bedrock 'high' beneath the site (reference Geologic cross sections in report titled "Supplemental Information in Response to Compliance Evaluation Inspecion FY 85-86 IT Corporation Vine Hill Facility) to act as a pathway for contaminant migration. Included in this tasks shall be constructing a "top of rock" contour for the site.
 - iv. Define the seasonal variations in groundwater levels in all existing wells and present the result in the form of hydrographs. The hydrographs shall depict monthly data through an entire year.
 - b. Implement the hydrogeologic investigation and characterization program from Task 6.a according to a schedule approved by the

Executive Officer.

- c. Submit a report acceptable to the Executive Officer documenting the findings of the hydrogeologic characterization program, signed by a registered civil engineer or certified engineering geologist, by a date to be specified by the Executive Officer. The report shall include all support data, tabulated and presented in a logical and easy to follow format.
- 7. Investigate the apparent tetraethyl-lead (TEL) contamination of soils around Ponds 100, 101, and 104 at the Vine Hill facility as follows:
 - a. Submit a plan and schedule for a boring and TEL analysis program to confirm or refute the findings of the 1981 DuPont report, described in Finding 19, for Executive Officer approval. The program shall provide for soil sampling at the specific depths and locations where TEL concentrations were found to be greater than 1000 parts per million. The plan and schedule is due December 15, 1986.
 - b. Implement the boring and TEL analysis program according to a schedule approved by the Executive Officer.
 - c. Submit a report acceptable to the Executive Officer documenting the findings of the boring and TEL analysis program, signed by a registered civil engineer or certified engineering geologist, by a date specified by the Executive Officer. The report shall include all the specific data used to make the determinations.
- 8. Determine the source of elevated phenol, boron, TOC, and TOX levels in groundwater monitoring well MW-203 at the Vine Hill facility as follows:
 - a. Submit detailed plan and schedule for determining the source of contaminants found in well MW-203. The plan shall contain provisions for (1) determining the location of well MW-203 with respect to the Discharger's north-south containment dike along Pond 101; (2) determining the location of well MW-203 with respect to the previous gap between Acme Landfill's and the Discharger's north-south dike in the vicinity of the well; (3) determining the relationship between the aquifer unit screened by well MW-203 and the bottom of the containment dike; (4) determining the vertical and horizontal extent of the peat layer screened by well MW-203; (5) sampling and analyzing well MW-203 for all priority pollutants: (6) comparing the analytical results of (5) to the contents of Pond 101; (7) comparing the analytical results of (5) to the historical data of constituents found in the leachate collected from the ditch which used to exist between Acme Landfill and the Vine Hill facility; and (8) draw conclusions as to the source of elevated contaminants in well MW-203 based on the above. The plan shall be submitted for Executive Officer approval by December 1, 1986.
 - b. Implement the plan from Task 8.a according to a schedule approved by the Executive Officer.

- c. Submit a report acceptable to the Executive Officer documenting the findings of the determination, signed by a registered civil engineer or certified engineering geologist, by a date to be specified by the Executive Officer. The report shall include all the specific data used to make the determination, tabulated in a logical format.
- 9. Augment the groundwater monitoring system at the Vine Hill facility to monitor the groundwater in the fill material as follows:
 - a. Submit plan and schedule for defining the areal extent of the fill and for installing additional monitoring wells in the fill layer for Executive Officer approval by January 15, 1987. The proposal shall include the rationale behind the various tasks.
 - b. Implement the plan from Task 9.a according to a scheule approved by the Executive Officer.
 - c. Submit a report acceptable to the Executive Officer documenting the installation of the monitoring system, signed by a registered civil engineer or certified engineering geologist, by a date to be specified by the Executive Officer. The report shall include all relevant data (eg. well logs, construction details, and development logs, presented in a logical and easy to follow format)
- 10. Investigate and thoroughly characterize the hydrogeology at the Baker facility as follows:
 - a. Submit a detailed plan and schedule to accomplish the tasks listed below by November 15, 1986 for Executive Officer approval. If the Discharger asserts that the work to accomplish the tasks listed below have already been done, then the Discharger shall submit a report(s) documenting the determinations by presenting the specific data which support the conclusions.
 - i. Define vertical gradients across the site with actual depth specific data (as would be gathered from cluster piezometers). Also define vertical hydraulic conductivities for the various hydrogeologic units beneath the site.
 - ii. Clearly identify the various aquifer/aquitard zones across the site and designate which wells are screened in the respective zones. Included in this task are revised cross sections which accurately reflect the lithology registered in all the well and boring logs. In addition, discuss and provide specific support data that demonstrate the integrity and continuity of the various aquitards at the site.
 - iii. Characterize the structure and permeability of the bedrock underneath the site. Included in this task is at least one borehole, with a minimum penetration of 20 feet into the bedrock, in the vicinity of ponds D-3 and E to provide a better definition of aguifer thickness in that area.

- iv. Explore the geology at the southeastern boundaries of Ponds D-1 and D-3. Included in this task are at least two borings in this area where previous drilling had not been done, developing the boreholes into fully penetrating monitoring wells if a sandy zone is found, and documenting the drilling with precise and accurate logs.
- v. Demonstrate, with specific data, the influence of Pacheco Creek and Walnut Creek on the groundwater underneath the facility. Included in this task are (1) cross sections showing the relative water levels of the creeks, the ponds, and the groundwater; and (2) a determination of whether each surface body acts as a recharge or discharge to groundwater.
- vi. Define the seasonal variations in groundwater levels in all existing wells and present the result in the form of hydrographs. The hydrographs shall have monthly data over a full year.
- vii. Submit a topographic base map that encompassess an area extending 2000 feet to both east and west of the facility to aid in the determination of potential of off-site influences.
- b. Implement the hydrogeologic investigation and characterization program from Task 10.a according to a schedule approved by the Executive Officer.
- c. Submit a report acceptable to the Executive Officer documenting the findings of the hydrogeologic characterization program, signed by a registered civil engineer or certified engineering geologist, by a date to be specified by the Executive Officer. The report shall include all support data, tabulated and presented in a logical and easy to follow format.
- 11. Further assess the apparent waste constituent migration into groundwater at the Baker facility as follows:
 - a. Submit a detailed plan and schedule by December 15, 1986, which will identify the vertical and horizontal extent of waste constituent migration. The plan shall be focused towards constituents of concern.
 - b. Implement or continue the assessment program according to a schedule approved by the Executive Officer.
 - c. Submit a report acceptable to the Executive Officer documenting the findings of the assessment characterization program, signed by a registered civil engineer or certified engineering geologist, by a date to be specified by the Executive Officer. All the support data shall be included and presented in a logical and easy to follow format.
- 12. Analyze the groundwater for the constituents listed in Appendix III,

Subchapter 15, Chapter 3, Title 23 of the California Adminstrative Code in all the monitoring wells on the Baker facility as follows:

- a. Submit a detailed plan and detailed schedule, specific to individual wells, for sampling and analyzing the groundwater for Appendix III constituents. If the program is already underway, submit a list of tasks completed and a detailed plan and schedule for accomplishing the remaining tasks. The report and/or plan shall be submitted by December 1, 1986 for Executive Officer approval.
- b. Implement or continue the Appendix III sampling and analysis program according to a schedule approved by the Executive Officer.
- c. Submit the results of the Appendix III sampling and analysis program by a date to be specified by the Executive Officer.
- 13. Determine the status of both the Baker and Vine Hill facilities with regards to the Toxic Pits Cleanup Act of 1984 as follows:
 - a (i). Submit a report assessing whether the installation of double liners, a leachate collection system, and a groundwater monitoring system at the Class I ponds could reasonably assure protection of State waters by December 15, 1986. This report shall include a time schedule for the installation of double liners, a leachate collection system, and a groundwater monitoring system if the report determines that these would protect State waters. If the report determines that double liners and a leachate collection system would not reasonably protect State waters, or if the Discharger chooses not to install these, then the Discharger shall submit a closure plan as specified in item (ii) below.
 - (ii) In lieu of the report required in (i) above, the Discharger may submit a closure proposal for the Class I ponds. Pond closure shall meet the definition in Section 25208.2 (d) of the Health and Safety Code and shall proceed forthwith according to the following schedule:

TASK

A. Submit closure proposal and time schedule

B. Cease accepting wastes

C. Remove or solidify all pond liquids

D. Final closure of ponds

COMPLETION DATE

December 15, 1986.

To be specified in an amendment to this Order based on the information provided in Task A above.

January 1, 1989.

To be specified in an amendment to this Order based

on the information provided in Task A above.

The closure proposal shall contain the following details:

- 1. A time schedule for ceasing to accept additional wastes in the ponds. This schedule shall be justified based on the timing and methods used to comply with item 2 below. It shall also demonstrate, or contain a separate time schedule for demonstrating, that continued acceptance of wastes for a limited time period will not increase the threat to pollute State waters.
- 2. A general description of methods and time schdules to remove or solidify pond liquids and time schedules for submittal of detailed removal methods.
- 3. Time schedules for submittal of detailed plans and for accomplishing the following:
 - (a) Solidification and/or removal of pond sludges.
 - (b) Removal of contaminated subsoils or closure as a landfill.
 - (c) Installation of final cover

The closure plan shall comply with all applicable sections of Subchapter 15, Chapter 3, Title 23 of the California Administrative Code.

Individual ponds may be exempted from provisions (i) and (ii) if the Discharger proves to the satisfaction of the Executive Officer that the individual ponds are not threatening to pollute.

- b. The Discharger shall submit a Hydrogeologic Assessment Report for the Baker and Vine Hill facilities that meets the requirements contained in Section 25208.8 of the California Health and Safety Code by April 1, 1987. This date may be modified based on submittals for other tasks in this Order.
- 14. Based on Finding 6, Cleanup and Abatement Order No. 85-004 is hereby rescinded.
- 15. All submittals must be made as follows: two copies to the Board, one copy to DHS, one copy to EPA, and one copy to the Contra Costa County Environmental Health Department.

Pursuant to California Water Code Sections 13304 and 13350, if the Discharger fails to comply with the provisions of this Order, the Executive Officer may request the Attorney General to take appropriate enforcement action against the Discharger, including injunctive reflief, or the Regional Board may schedule a hearing to consider assessing civil monetary penalties and to consider requesting the Attorney General to take appropriate enforcement action against the Discharger, including injunctive and civil monetary remedies.

SEPTEMBER 30, 1986
DATE

ROCE

EXECUTIVE OFFICER

